bush, but never in open ground and loose soil. The burrows were simple and straight or L-shaped with single opening and were usually 60-90 cm in length. Only one individual occupied a burrow during February, except during breeding season (March to August) when the female lived with her offsprings. To accommodate the offsprings the female widened the blind distal end of the burrow. Animals tended to dig burrow at dusk or afterwards. Most of the burrow openings were on the slopes. In soft soil *Hemiechinus auritus* could dig about 10 cm in 5 minutes, in a manner similar to that reported in moles (Hisaw 1923) using their forelegs and hind legs.

There was a marked seasonality in trapping success. The peak was noticed in summer (April-July) while in winter months (December-February) the trapping success was least (Table 2). During May and early August most of the females were trapped with their litters. One female was accompanied with 4 to 6 young. The number of young trapped during different months of a calendar year is given in Table 2. The maximum body weight was in summer (March-July) and the minimum was in winter (December-January). The average difference in body weight of the animals between summer and winter was 12%. These differences were not found to be statistically significant (Student's 't' test, $P>0.01$), probably due to large variation between the individuals. The maximum body weight in summer is probably a reflection of greater food availability. The females lost much of their weight after parturition. The presence of a male reduced the weight of female in a captivity or under restriction of food. It seemed that male was dominant over the female in captivity (Personal observations, Unpublished).

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REFERENCE

HISAW, F.L. (1923): Observations of the burrowing habits of mole (*Scalopus aguaticus machrinoides*). *J. Mamm., 4:* 79-88.

3. DO SHREWS PREY UPON RATS?

Grey musk shrews, *Suncus murinus* (L.) are often found in houses, poultry farms, grain stores, shops and fields in Asia and Europe. Grey musk shrews feed on household insects such as cockroaches and crickets, as well as on other invertebrates, small amphibians and reptiles (Annon. 1990). The range of this species is increasing. Prater (1980) has described grey musk shrews as "very intolerant of rats" and are believed to repel the rats by their strong and obnoxious body odour.

We captured one grey musk shrew in a multicatch rat trap (wonder traps, Jalgaon) on 3 December 1992 along the fields of Punjab Agricultural University, Ludhiana (30°56' N, 75°52' E and *c.* 247 m above MSL), India. This shrew had apparently consumed a gerbille, *Tatera indica* (Hardwicke) in the trap. From the size of the tail and other remaining parts the gerbille appeared to have been a juvenile.

This apparent case of predation by the shrew on the rat was in a confined condition. In natural conditions the shrews might prey upon young and weak rats. On many earlier occasions, we have trapped grey musk shrews in the multicatch rat traps but did not recover any rodent along with a shrew (unpublished data). We think, either the trapped rodents might have been consumed by the shrews or, probably, they avoided entering a trap that already contained a shrew.

We hypothesize that the strong smell of musk emitted by shrews might be responsible for repelling adult rats and enable shrews to capture inexperienced young and diseased ones. This predatory capability of musk shrews towards rodents and potential of their musk as a rodent repellent needs to be investigated.

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REFERENCES

ANONYMOUS (1990): Grezimek's Encyclopedia of Mammals. Vol. 1. pp. 494-495. New York. McGraw-Hill Publishing Company.

PRATER, S.H. (1990): The Book of Indian Animals. Bombay Natural History Society, Bombay.